

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

ENTROPIC COMMUNICATIONS, LLC,

Plaintiff,

v.

CHARTER COMMUNICATIONS, INC.,

Defendant.

Case No. 2:22-cv-00125-JRG

JURY TRIAL DEMANDED

**PLAINTIFF ENTROPIC COMMUNICATIONS, LLC'S OPPOSITION TO
DEFENDANT CHARTER COMMUNICATIONS, INC.'S MOTION FOR SUMMARY
JUDGMENT OF INVALIDITY OF THE ASSERTED CLAIMS OF THE '362 PATENT**

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A	Rebuttal Expert Report of Dr. Richard A. Kramer Concerning Validity of U.S. Patent Nos. 8,223,775 and 9,210,362 (“Kramer Reb. Rep.”)
B	Excerpts from the August 24, 2023 Deposition Transcript of Dr. Richard Kramer (“Kramer Tr.”)
C	Excerpts from the July 12, 2023 Deposition Transcript of Curtis Ling (“Ling Tr.”)
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I. INTRODUCTION

Plaintiff Entropic Communications, LLC (“Entropic”) submits this response in opposition to Defendant Charter Communications, Inc.’s (“Charter”) Motion for Summary Judgment of Invalidity of the Asserted Claims of U.S. Patent No. No. 9,210,362 (the “’362 Patent”)¹ (the “Motion”) (Dkt. 173).

II. RESPONSE TO STATEMENT OF ISSUES TO BE DECIDED BY THE COURT

Entropic objects to Charter’s statement of issues as misleading in at least the following ways: issue number 3 characterizes “the applicant admitted prior art (*see* ’362 patent at 6:55–58)” as being “exemplified in U.S. Patent No. 7,265,792 (‘Favrat’).” *See* Motion at I.3. Entropic disagrees that Favrat exemplifies any “applicant-admitted prior art,” and further disagrees that the cited portion of the ’362 Patent constitutes “applicant-admitted prior art.”

To the extent Charter’s “Statement of Issues” is not commensurate with the relief requested by the Motion, Entropic opposes all relief requested by the Motion regardless of whether Charter has identified such relief in its “Statement of Issues.” Entropic further responds to Charter’s “Statement of Issues” (Dkt. 173 at 1), respectfully submitting as follows:

1. The Court should deny Charter’s request for summary judgment of invalidity of the ’362 Patent for lack of adequate written description and/or enablement under 35 U.S.C. § 112.
2. The Court should deny Charter’s request for summary judgment of invalidity of claim 11 the ’362 Patent due to anticipation and/or obviousness under 35 U.S.C. § 102 or 103 in view of U.S. Patent No. 6,704,372 (“Zhang”).

¹ The ’362 Patent is attached as Exhibit A to Charter’s Motion. *See* Dkt. 173-2.

3. The Court should deny Charter's request for summary judgment of invalidity of claim 12 of the '362 Patent due to anticipation and/or obviousness under 35 U.S.C. § 102 or 103 in view of Zhang and Favrat.

III. RESPONSE TO STATEMENT OF UNDISPUTED MATERIAL FACTS ("SUF")

The Motion includes a "Statement of Undisputed Material Facts" ("SUF") numbered 1 through 59. *See* Motion at 1–8. Entropic responds to Charter's SUF as follows:²

1. Entropic agrees that Charter has accurately recited claims 11 and 12 of the '362 Patent with the addition of certain "element lettering."

2. Entropic agrees that the '362 Patent claims priority to Provisional Application No. 61/170,526, which was in turn filed on April 17, 2009.

3. Entropic agrees that the title of the '362 Patent is "Wideband Turner Architecture."

4. SUF 4 is not undisputed. Charter mischaracterizes the cited portion of the '362 Patent specification. The cited portion of the specification reads as follows: "This wide bandwidth of 800 MHz would require a very expensive digital processing circuitry such as very high-speed analog to digital conversion and high-speed processor in the demodulator." '362 Patent, 2:20-23. Charter's SUF is therefore disputed in that it inaccurately recites the problems identified in the prior art and misconstrues the '362 Patent specification.

5. SUF 5 is not undisputed. Entropic disagrees with Charter's characterization of what constitutes the invention of the '362 Patent because, among other things, the characterization is inaccurate and reductive. Charter cites to the '362 Patent at column 2, lines 20-27 (which discusses prior art), column 5, lines 13-19 (which discusses only a single exemplary embodiment of the '362

² The numbering of Entropic's responses to Charter's SUF tracks the numbering of the SUF in the Motion.

Patent), and Figure 2 (again, only a single exemplary embodiment of the '362 Patent). The invention of the '362 Patent, as described in the specification, is substantially different from what Charter has characterized it as. *See, e.g.*, '362 Patent, 1:17-23 (“In particular, the invention relates to wideband receiver systems that are capable of receiving multiple desired television channels that extend over multiple non-contiguous portions of the broad frequency spectrum and grouping them into a contiguous, or substantially-contiguous, frequency spectrum.”); *see also* Ex. A³, Rebuttal Expert Report of Dr. Richard Kramer (“Kramer Reb. Rep.”) ¶¶ 160–165.

6. SUF 6 is not undisputed. Charter mischaracterizes Figure 2 of the '362 Patent (notably without any citation, whether to the specification or other evidence) by reducing the problem of the prior art to merely the expense of analog-to-digital converters (ADCs) and reducing the invention of the '362 Patent to the ability to use less expensive ADCs. This is both reductive and misleading. *See, e.g.*, Response to SUFs 4, 5.

7. SUF 7 is not undisputed. Charter mischaracterizes Figure 2 and attempts to generalize it to all other embodiments of the '362 Patent without undertaking any analysis regarding each embodiment and the similarities and dissimilarities between them. Further, Charter fails to explain or proffer evidence regarding what it means by “operate similarly” and “in all relevant aspects.” *See* Motion at SUF 7. Without engaging in an embodiment-by-embodiment comparison, there is no way of knowing what Charter consider “all relevant aspects” or for embodiments of the '362 Patent to “operate similarly,” and thus Charter cannot meet its burden of proof (clear and convincing evidence) to the extent it attempts to generalize argument regarding Figure 2 to all embodiments of the '362 Patent. Indeed, there is conflicting evidence regarding whether Figure 2 is similar even to Figure 4. *Compare* SUF 7, *with* Ex. B, Kramer Tr. at 63:8-13

³ The exhibits cited herein are attached to the declaration of James Shimota submitted herewith.

(“Q: If you just compare Figure 4 to Figure 2, the radio front end have the same components. A: They are similar. I’d have to compare the specification and the descriptions, and there’s also differences. Figure 2 is not the same as Figure 4.”).

8. SUF 8 is not undisputed. Entropic agrees that ADCs generally take analog inputs and provide digital outputs, but disagrees with Charter’s SUF 8 in that 1) the citations to the ’362 Patent specification do not support SUF 8 whatsoever; 2) Charter’s explanation of the role of ADCs 218 and 228 in Figure 2 is incomplete; and 3) Charter attempts to extrapolate Figure 2 to all embodiments of the ’362 Patent, and as such is inaccurate and misleading.

9. SUF 9 is not undisputed. It is unclear whether Charter is referring to the ’362 Patent at all, much less a specific figure or embodiment of the ’362 Patent. *See* Motion at SUF 9 (making reference to an unspecified “incoming ‘RF input signal’”). Entropic further disputes and disagrees with SUF 9 to the extent that it refers to RF signals generally, rather than as limited to a particular figure, because Charter has not met its burden to show that every embodiment of the ’362 Patent discloses processing of RF signals in the way it has described.

10. SUF 10 is not undisputed. Two of Charter’s three citations for this SUF (’362 Patent at 1:27-31 and 1:67-2:2) are explicitly discussing prior art and Figure 1 (also prior art), not the claimed invention as Charter suggests. Charter’s SUF 10 is highly misleading and as such is disputed.

11. SUF 11 is not undisputed. Charter’s only support for this SUF is a single “*id.*” citation, which in turn suffers from the same problem that SUF 10 suffers. Namely, the citations in SUF 10 are referring to prior art and Figure 1, not Figure 2. Charter’s SUF 11 is highly misleading and is disputed.

12. Entropic agrees with SUF 12.

13. Entropic generally agrees with SUF 13, but disagrees with Charter's characterization of the invention of the '362 Patent and ADCs as it has discussed in its Responses to SUFs 4–6 and 8 above.

14. SUF 14 is not undisputed. Charter contends that “[t]he '362 patent only describes embodiments that reduce the bandwidth of the analog swath of channels provided to the ADCs by downconverting them and transforming them into ‘in-phase’ and ‘quadrature’ signals, or ‘I’ and ‘Q’ signals for short.” *See* Motion at SUF 14. Charter provides only a single citation as support: a portion of the '362 Patent specification that only discusses Figure 2. *Compare* Motion at SUF 14, *with* '362 Patent at 4:40–5:12 (SUF 14's only citation). The citation to the '362 Patent at 4:40–5:12 says nothing about splitting of a signal into its I and Q components reducing the bandwidth of the analog swath of channels. Further, Charter's citation plainly does not support a generalization of all embodiments of the '362 Patent and is a complete mischaracterization of the specification.

15. Entropic generally agrees with SUF 15.

16. SUF 16 is disputed in part. Charter argues that “Mixers 221 and 221 [sic] are part of a ‘complex mixer module for down-shifting...’” Given that Charter clearly made an error and referred to Mixer 221 twice, Entropic is forced to dispute and disagree with Charter's characterization.

17. SUF 17 is not undisputed. While Entropic agrees that the '362 Patent's specification discloses an embodiment that discloses a wideband analog-to-digital converter module that digitizes the in-phase and quadrature signals, Entropic disagrees that this is necessarily required as a limitation of the Asserted Claims of the '362 Patent. Entropic similarly disagrees that that the

ADC module disclosed is the particular ADC in Figure 2 or that Figure 2 can be generalized to the entire '362 Patent.

18. SUF 18 is not undisputed. Charter argues that “There is no description in the '362 patent of an embodiment that does not convert analog I and Q signals into digital I and Q signals.” Curiously, Charter does so without any citation to the '362 Patent, and on that basis alone Charter has failed to meet its burden and Entropic disputes the evidence proffered. The evidence that Charter does cite to includes Dr. Goldberg’s Report on Invalidity at Paragraphs 476–478, which Entropic’s expert, Dr. Kramer, specifically examined and disagreed with. *See* Ex. B, Kramer Reb. Rep. ¶¶ 166–173. As such, Entropic relies on its expert’s opinion and disputes Charter’s SUF 18.

19. SUF 19 is not undisputed. While Charter correctly quotes from the '362 Patent, Entropic disagrees with Charter’s interpretation of the phrase “thanks to the complex down-mixer architecture.” Charter assumes, without evidence or citation, the meaning of the sentence.

20. Entropic agrees with SUF 20.

21. SUF 21 is not undisputed. Charter identifies one example of a method of achieving a reduction in bandwidth and then generalizes this out to unidentified “described embodiments.” *See* SUF 21. Entropic disagrees to the extent that Charter purports to make this generalization for all embodiments of the '362 Patent, which Charter has failed to proffer evidence to show.

22. SUF 22 is not undisputed. Entropic disagrees with Charter’s SUF 22 in that 1) the citations to the '362 Patent specification do not support the broad generalizations made by SUF 22, including because the cited passage of the '362 Patent specification is referring to prior art; 2) Charter’s explanation of the role of ADCs is incomplete; and 3) Charter’s SUF 22 attempts to generalize one exemplary embodiment to the entire '362 Patent as a whole, and as such is inaccurate and misleading.

23. Entropic generally agrees with SUF 23.

24. SUF 24 is disputed in part. Entropic generally agrees that the “digital I and Q signals are supplied to a ‘bank of N complex mixers 250’ in the ‘digital front end’ as shown in Figure 2.” Motion at SUF 24. However, Entropic disagrees to the extent Charter’s SUF 24 attempts to generalize one exemplary embodiment from the specification to the entire ’362 Patent as a whole.

25. Entropic generally agrees that Charter has recited a portion of the ’362 Patent specification.

26. SUF 26 is not undisputed. Charter makes a sweeping generalization that “There is no description of digital mixers operating on anything other than digital I and Q signals or frequency-shifting undesired channels.” Curiously, Charter cites to no evidence whatsoever for this proposition, and for that reason alone this SUF is disputed. However, Dr. Kramer examined this issue in his Report, and therefore Entropic relies on the expertise of its expert and disputes SUF 26. *See* Ex. A, Kramer Reb. Rep. ¶¶ 166–173.

27. SUF 27 is not undisputed. Charter misstates Dr. Kramer’s testimony: as he stated repeatedly, splitting the signal into I and Q does not necessarily constitute downconverting. Ex. B, Kramer Tr. at 67:21–70:1, 70:4–11, 70:17–71:5.

28. SUF 28 is not undisputed for the same reason as SUF 27. Charter misstates Dr. Kramer’s testimony as he was not asked that specific question. *See* Ex. B, Kramer Tr. at 67:21–72:2.

29. SUF 29 is not undisputed. Although Dr. Kramer’s opinions in his Rebuttal Report as it relates to Zhang is under the heading of the “selecting” step, he also includes opinions regarding portions of the “selecting” step repeated elsewhere (such as “said plurality of desired

television channels” and “said digitized plurality of frequencies”). *See* Ex. A, Kramer Reb. Rep. ¶¶ 119–135.

30. SUF 30 is not undisputed. Although Zhang’s specification does make a single reference to a “wide-band receiver,” the disclosed invention of Zhang is “digital implementation of multi-channel demodulators.” *See* Dkt. 173-10 (Ex. I to Motion), Zhang at Title and Abstract.

31. Entropic generally agrees with SUF 31.

32. SUF 32 is disputed in part. Entropic agrees that SUF 32 quotes a portion of the Zhang specification, but disagrees with Charter’s characterization of the quote relating to the bandwidth that has no citation to evidence.

33. Entropic generally agrees with SUF 33.

34. Entropic generally agrees with SUF 34.

35. SUF 35 is not undisputed. As reflected in the portion of Dr. Kramer’s transcript that immediately follows the portion cited to by Charter’s SUF 35, Dr. Kramer’s opinion is that “the implementation of how the ’362 Patent was down-converting by a mixer module in the context of claim 11 changed the day it was filed when the patent was further allowed in the context of claim 11.” Ex. B, Kramer Tr. at 47:24–48:7. Furthermore, the implication of Charter’s SUF 35 is that downconverting must specifically be *analog* downconverting, which conflicts with the Court’s claim construction order. Entropic relies on the opinion of its expert and disputes Charter’s proffered fact.

36. Entropic generally agrees with SUF 36.

37. SUF 37 is not undisputed. As reflected by his testimony when asked about this topic, Dr. Kramer disagreed with limiting the term “mixer” to the examples provided by counsel for Charter, and provided alternative examples. Ex. B, Kramer Tr. at 28:11-18 (“My opinion is is

that the [’362 Patent’s] specification discusses explicit complex mixers. I don’t read the specification as limiting what those could mean.”); *id.* at 35:22-25 (“Q: What is a POSITA’s understanding of what a conventional mixer is? A: It says, ‘For example, differential Gilbert cells.’”).

38. Entropic generally agrees with SUF 38.

39. SUF 39 is disputed. The “n channels” is not the “total number of channels in the RF signal” in Zhang as Charter contends, but instead is the number of channels in a particular signal band. *See* Dkt. 173-10 (Ex. I to Motion), Zhang at 3:54-59 (“In this specific embodiment, ADC 220 is a high-speed ADC so that an entire signal band with n channels can be converted”). Importantly, this signal band is not the entire wideband spectrum. *See* Ex. A, Kramer Reb. Rep. ¶¶ 126. As such, there is a material dispute as to SUF 39.

40. Entropic generally agrees with SUF 40.

41. Entropic generally agrees with SUF 41.

42. Entropic agrees that Charter has quoted to various portions of the Zhang specification in SUF 42.

43. SUF 43 is not undisputed. Entropic disagrees with Charter’s the characterization of both Zhang and the ’362 Patent because, among other things, it misstates the supposed “savings costs and improving speeds” of both.

44. Entropic generally agrees with SUF 44.

45. SUF 45 is not undisputed. Dr. Kramer’s report addresses this element and disputes that the demultiplexer of Zhang is performing channel selection, at least as that selection is disclosed in the ’362 Patent. *See* Ex. A, Kramer Reb. Rep. ¶¶ 119–135. As such, Charter’s SUF 45 is disputed.

46. SUF 46 is not undisputed. First, Entropic assumes that by “claim 11” it is referring to the ’362 Patent, although there is no citation to the ’362 Patent in SUF 46 (or in the preceding SUF). To that same point, Charter appears to make a sweeping generalization about claim 11 of the ’362 Patent without any citation to the patent itself, and thus Entropic disputes SUF 46. Finally, Charter draws a false equivalence between what is sufficient for “wideband” and what is sufficient to practice claim 11 of the ’362 Patent. Indeed, “wideband” is necessary, but not sufficient, for practice of claim 11 the ’362 Patent. *See* ’362 Patent at 12:37-53; *see also* Ex. A, Kramer Reb. Rep. ¶¶ 119–135.

47. SUF 47 is disputed in part. While possibly correct, it is not material to any claim or defense at issue in this case and is irrelevant to the issue of whether Zhang discloses claim 11 of the ’362 Patent.

48. Entropic generally agrees with SUF 48.

49. Entropic generally agrees with SUF 49.

50. Entropic generally agrees with SUF 50.

51. Entropic generally agrees with SUF 51.

52. Entropic generally agrees with SUF 52.

53. SUF 53 is not undisputed. Charter’s only support for the proposition that “Serial and parallel interfaces were commonly known ways of outputting digital datastreams at the time of the ’362 Patent” is a citation to one paragraph of its expert’s report (which Entropic’s expert rebuts) and an out of context citation to Dr. Kramer’s deposition transcript. *Compare* Motion at SUF 53, *with* Ex. B, Kramer Tr. at 89:17–91:10 (“Q: The serial interface mentioned in claim 12 can be implemented according to commonly known methods for such interfaces; right? A: Disagree. Q: You disagree with what I just said? A: Yes, sir.”).

54. Entropic generally agrees with SUF 54.

55. Entropic generally agrees with SUF 55.

56. Entropic generally agrees with SUF 56.

57. SUF 57 is not undisputed. Charter's only support for its interpretation of Favrat in SUF 57 is a citation to a single paragraph of its own expert's report. *See* Motion at SUF 57. Dr. Kramer directly addressed and rebutted this paragraph of Dr. Goldberg's report. *See* Ex. A, Kramer Reb. Rep. ¶ 134; *see also id.* ¶¶ 129–135.

58. SUF 58 is not undisputed for the same reasons that SUF 57 is not undisputed. Charter's only support for its interpretation of Favrat in SUF 58 is a citation to a single paragraph of its own expert's report. *See* Motion at SUF 58. Dr. Kramer directly addressed and rebutted this paragraph of Dr. Goldberg's report. *See* Ex. A, Kramer Reb. Rep. ¶ 134; *see also id.* at ¶¶ 129–135.

59. SUF 59 is not undisputed for the same reasons that SUF 57 and 58 are not undisputed. Charter cites to 3 lines of the '362 Patent (which does not tell a POSITA how to interpret *Favrat* as Charter's SUF 59 contends) and a long section of its own expert's report. *See* Motion at SUF 59. Dr. Kramer directly addressed and rebutted these paragraphs of Dr. Goldberg's report. *See* Ex. A, Kramer Reb. Rep. ¶¶ 129–135; *see also* Ex. B, Kramer Tr. at 89:17–91:10 (“Q: The serial interface mentioned in claim 12 can be implemented according to commonly known methods for such interfaces; right? A: Disagree. Q: You disagree with what I just said? A: Yes, sir.”).

IV. LEGAL STANDARD

Summary judgment is proper when there are no genuine issues of material fact and the movant is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(a). A dispute of material fact

is genuine if the evidence is such that a reasonable jury could return a verdict for the nonmoving party. *See Anderson v. Liberty Lobby, Inc.*, 466 U.S. 242, 248 (1986). The moving party has the initial burden of demonstrating the lack of a genuine issue of material fact. *See Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986). All facts and inferences are viewed in the light most favorable to the non-moving party. *See Anderson* 466 U.S. at 247-48; *see also Seacor Holdings, Inc. v. Commonwealth Ins. Co.*, 635 F.3d 680 (5th Cir. 2011). The standard for summary judgment is two-fold: (1) there is no genuine dispute of material fact; and (2) the movant is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(a).

The written description requirement is a question of fact and is only amenable to summary judgment where no reasonable fact finder could return a verdict for the non-moving party. *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1307 (Fed. Cir. 2008) (citing *Invitrogen Corp. v. Clontech Labs., Inc.*, 429 F.3d 1052, 1072–73 (Fed. Cir. 2005)); *Atl. Research Mktg. Sys., Inc. v. Troy*, 659 F.3d 1345, 1354–55 (Fed. Cir. 2011). “A patent shall be presumed valid.” 35 U.S.C. § 282(a). For both written description and enablement, Charter’s evidentiary burden is to “show facts supporting a conclusion of invalidity [by] clear and convincing evidence because a patent is presumed valid. *Sitrick v. Dreamworks, LLC*, 516 F.3d 993, 999 (Fed. Cir. 2008); *see also PowerOasis, Inc.*, 522 F.3d at 1307; *see also Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1374 (Fed. Cir. 2001) (holding that the presumption of validity may only be overcome by clear and convincing evidence of invalidity).

V. ARGUMENT

A. There Is, at Best for Charter, a Genuine Dispute of Material Fact Regarding Whether Claims 11 and 12 of the ’362 Patent Are Described and Enabled

As with every defense of lack written description and/or enablement, Charter’s cannot succeed without proving a variety of facts. In this case, nearly all of the facts Charter recites in

support of its § 112 defenses are very much contested. *See supra* Section III, Response to SUFs 4–11, 13, 14, 16–19, 21, 22, 24, 26–28. Many of the disputed issues stem from Charter’s deep mischaracterizations of the disclosures of ’362 Patent. The mischaracterizations follow an overall pattern:

1. Charter mischaracterizes the fundamental idea of the ’362 Patent is a reduction in bandwidth of a signal before being processed by an ADC. *See* Motion at 14–17.
2. Charter attempts to demonstrate this by selecting a single figure (Fig. 2), declaring that it is the “the invention,” and overlooking the full disclosure. *See* Motion at 15–17.
3. Charter then relies on the setups of 1 and 2 to argue that there is no disclosure of digitization before downconversion. *See* Motion at 17–20 (in spite of the specification’s actual disclosure of the same).

The problem here is the same one that was elucidated during the *Markman* process—the ’362 Patent **does** disclose digitization before the claimed downconversion. Section B.i., below. Charter is wrong, and thus Charter’s “facts” related to these issues are disputed by Entropic. Given the vast disputes regarding the facts, Charter’s enablement and written description issues are not summary judgment material.

Charter’s motion also fails because the motion does not properly connect Charter’s “facts” (disputed though they are) to the relevant legal tests governing written description and enablement. Charter dutifully recites many pages of legal standards (Motion at 9–14), but then abandons them when it is time to apply the law to **this** case. Charter’s motion muddles the separate doctrines of written description and enablement together, and does not connect the requirements of each doctrine to the “facts.” Charter takes a *gestalt* approach which cannot meet its burden on summary judgment.

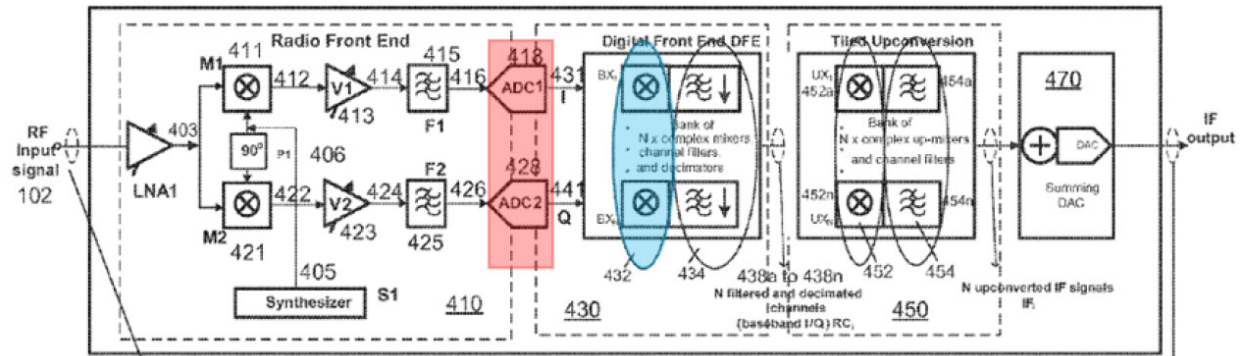
B. There is a Genuine Dispute of Material Fact Regarding Whether Claims 11 and 12 of the '362 Patent Lack Written Description and Are Enabled

i. The '362 Patent explicitly discloses digitization before downconversion, and Charter cannot meet its burden to show lack of enablement or written description

Charter's Motion fails because the specification of the '362 Patent explicitly discloses what Charter says it does not. In Charter's view, the Patent is invalid because it allegedly does not disclose digitization before downconversion.⁴ But it does, as discussed below. Charter's argument is familiar—it is the same one Charter made during the *Markman* process, where Charter and Entropic disputed the same issue. Ultimately the Court's claim construction order held that the “digitizing” and “downconverting” steps may be performed in any order. (Dkt 123 at 52) Charter now recycles its previous arguments about the disclosure of the '362 Patent in support of written description and enablement defenses.

Those defenses fail for the same simple reason: the '362 Patent discloses the claimed downconversion after digitization. *See, e.g.*, '362 Patent at 5:31-58, 7:11-34, FIG. 4; *see also* Ex. A, Kramer Reb. Rep. ¶¶ 166–173. Specifically, and as analyzed by Dr. Kramer, Figure 4 of the '362 Patent shows that mixing/downconversion of a digital signal by mixers 432 (blue) occurs after ADC's 418 and 428 (red):

⁴ Charter claims that the '362 Patent's specification does not enable any order of the steps other than “downconversion of the analog signal *before* analog-to-digital conversion.” Motion at 18 (emphasis in original).



'362 Patent, Fig. 4 (annotated). Dr. Kramer agrees: “the '362 Patent plainly discloses that this mixing, and thus downconversion, may be accomplished on either analog signals or their digital versions. This is necessarily true because the signal passes through an analog-to-digital converter (ADC) before being mixed.” Ex. A, Kramer Reb. Rep. ¶ 171. This mixing/downconversion of digital signals can be performed on all channels (*i.e.*, both desired and undesired television channels as required by claim 11), as contemplated by the plain language of the specification:

Digital signals I 232 and Q 242 are then applied to a bank of N complex mixers 250, wherein N is an integer value corresponding to a the number of desired RF channels located in the non-contiguous portions of the frequency spectrum BW1. It is understood that the number N can be any integer value. *In one embodiment, N can be equal to the number of **all available channels** that exist in the licensed frequency spectrum to provide system flexibility.*

'362 Patent, 5:31–38 (emphasis added). Again, this disclosure issue arose during *Markman* briefing, which may be helpful to the Court. *See* Dkt. 97 at 22–26; Dkt. 110 at 8–9.

In the context of the present motion for summary judgment, the crucial point is that the question of what is disclosed is very much disputed. *E.g.*, *supra* Section III, Response to SUFs 4–11, 13, 14, 16–19, 21, 22, 24, 26–28. Though Entropic believes that the disclosure of digitization before downconversion is present and clear, Charter disputes this. Accordingly there are genuine issues of material fact, precluding summary judgment.

ii. Charter’s does not connect its purported “facts” to the actual legal doctrines and legal standards

Having laid out the affirmative case that the disclosure of digitization before downconversion is present, compelling a denial of Charter’s motion, Entropic turns to address Charter’s briefing. Problematically, Charter’s argument is a hodgepodge of “facts” and rhetoric not connected in any cogent way to the actual tests of the legal doctrines of written description and enablement. Charter spends five pages reciting the case law, but fails to actually employ it on the “facts” it alleges to meet the applicable requirements of invalidity.

First, as the Court is well aware, invalidity is Charter’s burden to prove by clear and convincing evidence, even on summary judgment. Charter’s motion gets it backward: “Section 112 is not satisfied merely by a showing that the specification describes and enables specific embodiments covered by the claims, which is all that Entropic’s expert does in his report.” Motion at 10. It is **Charter** that must show there is something **not** disclosed, and that something is sufficient to clearly and convincingly meet the legal tests for invalidity under the written description or enablement doctrines. Charter admittedly points to the digitization-before-downconversion issue, but as already discussed, that **is** disclosed.

Charter also hopelessly blends the two doctrines. Again, as the Court is well aware, the written description and enablement requirements are separate and have different legal tests. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1345–52 (Fed. Cir. 2010) (en banc). However, Charter conflates the two doctrines, instead focusing almost entirely on the “full scope” rule. *See* Motion at 9–14. But “full scope” is a question that belongs solely to the law of enablement. *Ariad Pharms., Inc.*, 598 F.3d at 1340; *see also ALZA Corp. v. Andrx Pharms., LLC*, 603 F.3d 935, 940 (Fed. Cir. 2010) (“To be **enabling**, the specification of a patent must teach those skilled in the art how to make and use the **full scope** of the claimed invention without ‘undue experimentation.’”)

(quoting *Genentech Inc. v. Novo Nordisk A/S*, 108 F.3d 1361, 1365 (Fed. Cir. 1997)) (emphasis added).

Turning, therefore, to enablement, “[t]he enablement requirement is satisfied when one skilled in the art, after reading the specification, could practice the claimed invention without undue experimentation.” *Sitrick*, 516 F.3d at 999 (quoting *AK Steel Corp. v. Sollac*, 344 F.3d 1234, 1244 (Fed. Cir. 2003)). Charter is required to show by clear and convincing evidence that a POSITA would **not** be able to practice the claimed invention without undue experimentation, which is analyzed under a multi-factor test:

To prove that a claim is invalid for lack of enablement, a challenger must show by clear and convincing evidence that a person of ordinary skill in the art would not be able to practice the claimed invention without ‘undue experimentation.’ In analyzing undue experimentation, we consider factors such as: (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

Enzo Life Scis., Inc. v. Roche Molecular Sys., Inc., 928 F.3d 1340, 1345–46 (Fed. Cir. 2019) (quoting *Alcon Research Ltd. v. Barr Labs., Inc.*, 745 F.3d 1180, 1188 (Fed. Cir. 2014) and *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988)) (internal quotations and citations omitted). Charter’s Motion pays lip service to the legal tests, it does not apply them to the facts of **this case**. Charter identifies no evidence connected to the eight factors, much less does it walk through the factors and connect each to the facts. The Court is left to fill in all the blanks.

Turning to written description, the question is possession not enablement. And for description, “the written description requirement does not demand either examples or an actual reduction to practice; a constructive reduction to practice that in a definite way identifies the claimed invention can satisfy the written description requirement.” *Ariad Pharms., Inc.*, 598 F.3d at 1352. Given the actual disclosure of digitization before downconversion as discussed in the prior

section, at a minimum Entropic has identified a constructive reduction to practice. *See supra* discussion of claim 11 and Figure 4 of the '362 Patent. At an absolute minimum Entropic has shown a plethora of genuine disputes of material fact precluding summary judgment.

iii. Charter's Motion relies upon numerous facts genuinely in dispute

Even assuming that Charter's Motion had properly connected the legal doctrines to the "facts," summary judgment is inappropriate because Charter's "facts" are very much in dispute. Charter repeatedly misstates what the '362 Patent discloses. Entropic contests the misstatements, yielding numerous disputed facts. *See supra* Section III, Response to SUFs 4–11, 13, 14, 16–19, 21, 22, 24, 26–28.

For example, Charter begins by isolating the embodiment in Figure 2 and then declaring that *all* embodiments of the '362 Patent are the same, without analyzing them. *See* Motion at 14–17. As explained by Dr. Kramer, the various embodiments are not the same; Figure 2 is no proxy. *See* Ex. A, Kramer Reb. Rep. ¶ 171; *see also* Ex. B, Kramer Tr. at 63:4-19. Charter pursued the same line of argument in the *Markman* process. There too Charter's reliance on Figure 2 to the exclusion of the rest of the disclosure was not convincing:

Finally, Defendant does not persuasively justify limiting the claim to "radio frequency (RF)" signals. Defendant's reliance on the "complex mixer module" 211/221 illustrated in Figure 2 is unavailing. (See Dkt. No. 104, at 25–26 (discussing '362 Patent at Fig. 2).) To the extent the specification discloses downconverting radio frequencies, the use of radio frequencies is a particular feature of disclosed embodiments that should not be imported into the claim.

Dkt 123 at 51. In the context of the present motion, the crucial point is that the question of what is disclosed—both in Figure 2 and the rest of the specification—is very much disputed.

Charter's Motion is based upon many other "facts" that are hotly disputed. *See, e.g.*, Motion at 14–16 (relying on SUF 5, 6, 8–11, 14, 16-19, 21, 22, 24, and 26, every one of which is disputed as discussed *supra* in Section III). For SUF 22, for example, the citations to the '362 Patent

specification do not support the broad generalizations made, including because the cited passage of the '362 Patent specification is referring to prior art, not Figure 2 or any other embodiment of the invention of the '362 Patent. *See supra* Section III, Response to SUF 22. Charter also specifically relies on SUF 27 and 28, which Entropic disputes, as well as Paragraph 476 of Dr. Goldberg's Invalidity Report, which Entropic's expert analyzed, addressed, and specifically disagreed with. *See* Ex. A, Kramer Reb. Rep. ¶¶ 166–173. Testimony from one of the inventors, Dr. Curtis Ling, creates further material disputes regarding both Charter's interpretation of the disclosure of the '362 Patent. *See* Ex. C, Ling Tr. at 164:23-165:5, 167:3-19 (“when you read the claim elements in '362, what you see is that, depending on where you draw your system architecture partition, the elements can be digital or analog...”).

Given the unquestionable materiality of these facts in dispute, Charter is unable to demonstrate that the facts upon which it relies are undisputed, much less that such facts confirm its interpretation of the '362 Patent specification by clear and convincing evidence. *Bristol-Myers Squibb Co.*, 246 F.3d at 1374. As such, Charter's Motion should be denied.

C. There is a Genuine Dispute of Material Fact Regarding Whether Claims 11 and 12 of the '362 Patent Are Valid Under 35 U.S.C. §§ 102 and 103 In View of Zhang

Although the title to this section of Charter's Motion suggests otherwise, Charter argues that a single reference (Zhang) discloses all elements of claim 11, and that Zhang in combination with other prior art (which Charter claims is “exemplified” by Favrat) discloses claim 12. Regardless of how many references are used, Charter's argument fails because there are genuine disputes of material fact regarding whether Zhang discloses all elements and Charter fails to carry its burden of proof. *See Bristol-Myers Squibb Co.*, 246 F.3d at 1374. Because it is Charter's burden to show that its proposed prior art discloses every limitation of the Asserted Claims, Entropic only addresses the elements that most clearly demonstrate that Charter's Motion must be denied.

Nonetheless, Entropic has also filed an affirmative Motion for Summary Judgment for a finding of no invalidity under 35 U.S.C. §§ 102 and 103 on the grounds that Zhang does not disclose or render obvious all elements of claim 11. *See* Dkt. 170 at 10–14. In spite of the genuine disputes of material fact that preclude Charter’s Motion on Section 102 and 103, Entropic’s Motion for Summary Judgment does not rely on facts that are in dispute. Entropic’s Motion for Summary Judgment is not impacted by the disputes that are raised in this Opposition.

- i. **[11a1]: “downconverting, by a mixer module of said wideband receiver system, a plurality of frequencies that comprises a plurality of desired television channels and a plurality of undesired television channels;”**

Charter’s argument as to the “downconverting” step relies on Zhang’s disclosure of a “down converter 210,” but ultimately fails because Zhang fails to disclose the kind of mixer module disclosed in the ’362 Patent. Thus, Charter’s Motion must be denied.

Preliminarily, Charter relies on several material facts that are disputed. *Compare* Motion at 22–24, *with supra* Section III, Response to SUFs 35, 37, 39, 43 (all disputed by Entropic in light of conflicting evidence). For example, Charter relies on SUF 35 and quotes an out of context portion of Dr. Kramer’s deposition testimony. *See* Motion at 23. As reflected in the portion of Dr. Kramer’s transcript that immediately follows the portion cited to by Charter’s SUF 35, Dr. Kramer’s opinion when asked if downconversion differed from the prior art was that “the implementation of how the ’362 Patent was down-converting by a mixer module in the context of claim 11 changed the day it was filed when the patent was further allowed in the context of claim 11.” Ex. B, Kramer Tr. at 47:24–48:7; *see also id.* at 28:11-18 (“My opinion is is [sic] that the [’362 Patent’s] specification discusses explicit complex mixers. I don’t read the specification as limiting what those could mean.”). Furthermore, the implication of Charter’s SUF 35 is that downconverting must specifically be limited to ***analog*** downconverting prior to digitization, which was expressly rejected by the Court at *Markman*. *See* Dkt. 123 at 52 (construing claim 11 to allow

digital downconversion). Entropic relies on the opinion of its expert and the Court's claim construction and disputes Charter's proffered facts. Denial of Charter's motion is appropriate.

Charter's Motion must also be denied because, in fact, a critical lack of proof by Charter means that summary judgment is appropriate in the *opposite direction*. The claims are *not* invalid, as discussed in Entropic's corresponding motion for summary judgment. *See* Dkt. 170 at 10–15. Although discussed more completely in that motion, briefly Charter's expert Dr. Goldberg admitted in his report that Zhang is missing an element. *Id.* at 10–14. Charter's motion against claim 11, based on § 102 anticipation, automatically fails.

Dr. Goldberg opines that Zhang does not disclose the use of a “mixer” in connection with its downconversion. *See* Ex. D, Goldberg Rep. ¶ 391 (“I note that the specification of Zhang does not use the term ‘mixer’ in connection with its frequency block down converters.”) Rather than disclosing mixers, Zhang actually discloses downconversion using *multipliers*. *See* Dkt. 173-10 (Ex. I to Motion), Zhang at 2:23-24, 4:33-39, 4:47-48, 4:54-56, FIG. 2; *see also* Ex. B, Kramer Tr. at 135:6-11 (“Q: Does Zhang disclose downconversion using a multiplier? . . . A: He discloses a multiplier, not a mixer...”). Furthermore, Dr. Goldberg does not allege mixers are inherent in Zhang, because there are other possibilities for accomplishing downconversion, ruling out that Zhang must necessarily use mixers. Ex. B, Kramer Tr. at 136:2-4, 8-12 (“Q: Are you familiar with any other techniques for analog signal multiplication? A: Yes, there's lots of them....There's hall effect fax sensors [*sic*] that do it using physics. There's different methods of doing multiplication through signals.”). No explicit disclosure, plus no inherency, closes the door on anticipation. Charter has failed to carry its burden to prove that Zhang discloses the “downconversion” step of the '362 Patent, and thus its Motion should be denied.

- ii. [11a3]: “selecting, by digital circuitry of said wideband receiver system, said plurality of desired television channels from said digitized plurality of frequencies; and”

For the “selecting” step of claim 11, Charter relies upon a selector in Zhang, but one that cannot meet the claims. Zhang’s selector operates on the complete digitized plurality of frequencies and therefore fails. Charter argues that Zhang’s “digital channel demux” and “n x m selector” perform the required limitation of the “selecting” step of claim 11 the ’362 Patent. *See* Motion at 25–26. The demux of Zhang, however, does not practice this element because the “plurality of frequencies” on which the selection step is required to operate must include “said plurality of desired television channels and said plurality of undesired television channels.” *See* ’362 Patent at claim 11; *see also* Ex. A, Kramer Reb. Rep. ¶¶ 121–124. Neither Zhang nor Dr. Goldberg explain how Zhang’s demux is capable of handling all desired and undesired television channels required by claim 11. *See* Ex. A, Kramer Reb. Rep. ¶ 124. For example, Zhang discloses “RF channels C_1 to C_n contain *content channels that are selected or used by a subscriber.*” Dkt. 173-10 (Ex. I to Motion), Zhang at 4:2-4 (emphasis added). Because claim 11 requires selection from *all* desired and undesired television channels, Zhang does not disclose selection as specifically required by the ’362 Patent. Ex. A, Kramer Reb. Rep. ¶¶ 121–124.

Furthermore, the considerable space Charter devotes to disputing Dr. Kramer’s opinions on this element only highlight that there are, at a minimum, genuine issues of material fact that preclude summary judgment. *See* Motion at 26–27. Dr. Kramer opines:

Specifically in Zhang, the “digital tuner 300” or “polyphase channel demultiplexer 400” require “n” “separate “LPF[s]” (Low Pass Filters) and/or “n” “NCOs” (Numeric[ally] Control[led] Oscillators). *See* Zhang at 4:33-41 (“a bank of n numeric control oscillators (NCOs) 310(1 ... n), complex multipliers 320(1... n), and low-pass filters (LPFs) 330(1 ... n). One chain of each of these elements is used for each RF channel ... The exact number of these elements will depend on the number of RF channels to be demultiplexed”); 5:1-9 (“LPFs ... One LPF is used for each channel, and the exact number of LPFs will thus depend on the number of RF channels to be demultiplexed”), FIG. 3, FIG. 4. Thus, in my opinion, a POSITA

would understand not the entire wideband spectrum is being utilized by the “digital tuner 300” or “polyphase channel demultiplexer 400” of Zhang.

Ex. A, Kramer Reb. Rep. ¶ 126. It would be impossible for Zhang to digitize and select from the entire spectrum because Zhang discloses one chain of digital tuners and demultiplexers for each RF channel. *See* Ex. A, Kramer Reb. Rep. ¶¶ 125–126. The materiality of these facts is clear. Charter disagrees with Dr. Kramer. Charter alleges, without citing evidence, that Zhang’s “10 channels” are sufficient to meet the claims constitute wideband. *See* Motion at 26–27. The claim language plainly requires the selection to occur from the plurality of signals composed of all the desired and undesired channels. *See* Ex. A, Kramer Reb. Rep. ¶ 116. However, as described above, neither Zhang nor Dr. Goldberg explains how Zhang can process all desired and undesired channels. Therefore, Charter has failed to establish that Zhang discloses the wideband receiver system of claim 11.

As such, Charter’s argument as to claim 11 fails and its motion should be denied.

iii. [12]: “The method of claim 11, comprising outputting, by said digital circuitry of said wideband receiver system, said digital datastream via a serial interface.”

Turning to dependent claim 12, Charter argues that Zhang, in combination with prior art known to a POSITA as exemplified by Favrat, renders the claim obvious. Charter’s argument relies on a tortured interpretation of a single figure of Favrat, and Charter’s own argumentation highlights the substantial dispute between Charter’s expert and Entropic’s expert regarding the knowledge of a POSITA and motivation to combine.

As a preliminary matter, Zhang does not disclose outputting via a serial interface as required by claim 12 of the ’362 Patent. Charter’s expert, Dr. Goldberg, admits as much. Ex. D, Goldberg Rep. ¶ 413 (“Zhang, however, does not expressly disclose that the selected RF channels are provided to the demodulators via a serial interface are converted to a digital data stream to be

sent to a demodulator.”). This alone should be sufficient to deny Charter’s Motion. Along the same vein, Charter argues that “‘outputting a digital datastream via a serial interface’ element is a species within a small genus (outputting a digital datastream) that is disclosed in Zhang.” Motion at 28. However, Charter makes its argument without factual support, and even if it did, this point is disputed by Entropic’s expert. *See* Ex. A, Kramer Reb. Rep. ¶¶ 134, 165.

Without any indication of a motivation to combine, Charter then argues that Zhang combined with the knowledge of a POSITA would have rendered claim 12 obvious by pointing to Favrat. *See* Motion at 29. But Favrat is of no help. Charter’s expert, Dr. Goldberg, admitted that “the signal output circuit in FIG. 1 [of Favrat] converts the digital IF signals *to analog* (via DACs 141 and 145).” *See* Ex. A, Goldberg Rep. ¶ 419 (emphasis added). So Favrat outputs an *analog* signal, not digital. At no point does Charter’s Motion explain how either Zhang, Favrat, or a combination of the two specifically disclose a *digital datastream* output via a serial interface as required by claim 11. Furthermore, Charter has failed to articulate any motivation to combine Zhang with Favrat, given the disparity in the fields of the invention. Favrat is directed to a converter for a TV (thus a “television receiver”) that “converts” a specific television channel from “one of several signal formats” (*see* Dkt. 173-11 (Ex. J to Motion), Favrat at 6:7-16), whereas Zhang is directed towards “a method and circuitry for implementing demodulator circuits” (Dkt. 173-10 (Ex. I to Motion), Zhang at 1:20-22). Dr. Goldberg does not explain why a POSITA would be motivated to make this combination. On the other hand, Dr. Kramer’s opinion is that “a POSITA would not be motivated to combine the disclosures of Zhang and Favrat.” *See* Ex. A, Kramer Reb. Rep. ¶ 132. As such, at a minimum, there is a genuine dispute of material fact regarding Charter’s proposed combination.

The substantive gaps cannot be genuinely disputed by Charter. But even if they could be, that would merely mean Charter relies upon disputed material facts, compelling the denial of summary judgment. Charter contends that Dr. Kramer admitted at deposition that the digital datastream via a serial interface was conventional and well-known. *See* Motion at 28–29, SUF 53. Charter grossly misstates Dr. Kramer’s testimony, and Entropic disputes any such admission. *Compare* Motion at SUF 53, *with* Ex. B, Kramer Tr. at 89:17–91:10 (“Q: The serial interface mentioned in claim 12 can be implemented according to commonly known methods for such interfaces; right? A: **Disagree**. Q: **You disagree** with what I just said? A: **Yes, sir.**”) (emphasis added). Another example is Charter’s reliance SUF 57 (interpreting Favrat). *See* Motion at 30. Charter’s only support for its interpretation of Favrat in SUF 57 is a citation to a single paragraph of its own expert’s report. *See* Motion at SUF 57. Dr. Kramer directly addressed and rebutted this paragraph of Dr. Goldberg’s report. *See* Ex. A, Kramer Reb. Rep. ¶ 134; *see also id.* ¶¶ 129–135. Indeed, Charter curiously spends the concluding paragraphs of its Motion highlighting the disagreement between Dr. Kramer and Dr. Goldberg. *See* Motion at 30. As such, there are genuine disputes regarding the facts underpinning Charter’s motion.

VI. CONCLUSION

For the reasons discussed above, there are several genuine factual disputes that preclude a determination as a matter of law, and Charter’s Motion should be denied. .

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing document was filed electronically in compliance with Local Rule CV-5(a) and served via email on all counsel of record on September 25, 2023.

/s/ James Shimota

James Shimota